Abstract

A system and method for parallel computation of Discrete Sine and Cosine Transforms. The computing system includes a plurality of interconnected processors and corresponding local memories. An input signal x is received, partitioned into P local vectors x_i, and distributed to the local memories. The preprocessors may calculate a set of coefficients for use in computing the transform. The processors perform a preprocess in parallel on the input signal x to generate an intermediate vector y. The processors then perform a Fast Fourier Transform in parallel on the intermediate vector y, generating a second intermediate vector a. Finally, the processors perform a post-process on the second intermediate vector a, generating a result vector v, the Discrete Transform of signal x. In one embodiment, the method generates the Discrete Sine Transform of the input signal x. In another embodiment, the method generates the Discrete Cosine Transform of the input signal x.